What is claimed is:

1. A method comprising a plurality of activities, comprising:

automatically:

receiving a plurality of elements for each of a plurality of continuous data streams;

treating the plurality of elements as a first data stream matrix that defines a first dimensionality;

reducing the first dimensionality of the first data stream matrix to obtain a second data stream matrix;

computing a singular value decomposition of the second data stream matrix; and

based on the singular value decomposition of the second data stream matrix, quantifying approximate linear correlations between the plurality of elements.

2. The method of claim 1, further comprising:

obtaining the plurality of elements.

3. The method of claim 1, wherein at least one of the plurality of continuous data streams is synchronous.

4. The method of claim 1, wherein at least one of the plurality of continuous data streams is asynchronous.

5. The method of claim 1, wherein at least one of the plurality of continuous data streams is bursty.

6. The method of claim 1, wherein at least one of the plurality of continuous data streams is sparse.

7. The method of claim 1, wherein at least one of the plurality of continuous data

streams comprises out of order elements.

8. The method of claim 1, wherein said reducing activity applies the Johnson-Lindenstrauss Lemma.

9. The method of claim 1, further comprising:
repeating said computing activity.

10. The method of claim 1, further comprising:
periodically repeating said computing activity.

11. The method of claim 1, further comprising:
randomly repeating said computing activity.

12. The method of claim 1, wherein said quantifying activity occurs dynamically.

13. The method of claim 1, wherein the approximate linear correlations comprise a plurality of eigenvalues that approximate principal eigenvalues of the first data stream matrix.

14. The method of claim 1, wherein the approximate linear correlations comprise a plurality of eigenvectors that approximate principal eigenvectors of the first data stream matrix.

15. The method of claim 1, further comprising:
receiving a user-specified accuracy metric for the approximate linear correlations.

16. The method of claim 1, wherein the approximate linear correlations meet a user-specified accuracy metric.

17. The method of claim 1, further comprising:

outputing the approximate linear correlations.

18. The method of claim 1, further comprising:

reporting the approximate linear correlations.

19. A machine-readable medium comprising instructions for activities comprising:

receiving a plurality of elements for each of a plurality of continuous data streams;

representing the plurality of elements as a first data stream matrix that defines a first dimensionality;

reducing the first dimensionality of the first data stream matrix to obtain a second data stream matrix;

computing a singular value decomposition of the second data stream matrix; and

based on the singular value decomposition of the second data stream matrix, quantifying approximate linear correlations between the plurality of elements.

20. A system comprising:

a stream element processor adapted to receive a plurality of elements for each of a plurality of continuous data streams;

a first matrix processor adapted to represent the plurality of elements as a first data stream matrix that defines a first dimensionality;

a second matrix processor adapted to:

reduce the first dimensionality of the first data stream matrix to obtain a second data stream matrix;

compute a singular value decomposition of the second data stream matrix; and

based on the singular value decomposition of the second data stream matrix, quantify approximate linear correlations between the plurality of elements.